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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>7</sup> :</b> <b>B65D 83/00</b>	<b>A2</b>	<b>(11) International Publication Number:</b> <b>WO 00/56632</b> <b>(43) International Publication Date:</b> 28 September 2000 (28.09.00)
<b>(21) International Application Number:</b> PCT/EP00/01444 <b>(22) International Filing Date:</b> 23 February 2000 (23.02.00) <b>(30) Priority Data:</b> 9906640.9 24 March 1999 (24.03.99) GB <b>(71) Applicant (for all designated States except US):</b> GLAXO GROUP LIMITED [GB/GB]; Glaxo Wellcome House, Berkeley Avenue, Greenford, Middlesex UB6 0NN (GB). <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> ANDERSON, Gregor, John, McLennan [GB/GB]; (GB). HAILEY, Mark, Andrew [GB/GB]; (GB). RUSSELL, David, Joseph [GB/GB]; (GB). GODFREY, James, William [GB/GB]; Glaxo Group Ltd., Park Road, Ware, Herts SG12 0DP (GB). <b>(74) Agent:</b> PIKE, Christopher, Gerard; Pike & Co., Hayes Loft, 68A Hayes Place, Marlow, Buckinghamshire SL7 2BT (GB).		<b>(81) Designated States:</b> AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>Without international search report and to be republished upon receipt of that report.</i>
<b>(54) Title:</b> VALVE		
<b>(57) Abstract</b> <p>There is provided a valve for an aerosol container. The valve comprises a valve body; within the valve body, a sealing ring and receivable by the sealing ring, a valve stem having a dispensing passage. The valve stem is slidably movable within the sealing ring from a valve-closed position to a valve-open position in which the interior of the valve body is in communication with the dispensing passage. The sealing ring is shaped such as to reduce the contact area between the sealing ring and the valve stem. Preferably, the valve is a metering valve.</p>		

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Claims

1. Valve for an aerosol container, the valve comprising a valve body;  
within said valve body, a sealing ring; and receivable by said sealing ring, a  
5 valve stem having a dispensing passage, the valve stem being slidably movable  
within the sealing ring from a valve-closed position to a valve-open position in  
which the interior of the valve body is in communication with the dispensing  
passage, wherein the sealing ring is shaped such as to reduce the contact area  
between the sealing ring and the valve stem.

2. Valve according to claim 1, wherein the area of contact between the  
sealing ring and the valve stem is less than 90% of what the area of contact  
would be if the sealing ring had square-cut edges.

3. Valve according to either of claims 1 or 2, wherein the sealing ring is  
formable by a moulding process.

4. Valve according to claim 3 wherein the moulding process is injection  
moulding.

5. Valve according to claim 3 wherein the moulding process is  
compression moulding.

6. Valve according to claim 3 wherein the moulding process is transfer  
moulding.

7. Valve according to any of claims 1 to 6, wherein the sealing ring is not  
movable relative to the valve body.

8. Valve according to claim 7, wherein the sealing ring is held within a  
cavity in the valve body.

9. Valve according to any of claims 1 to 8, wherein the stem-receiving  
part of the sealing ring has at least one rounded edge.

10. Valve according to any of claims 1 to 9, wherein the stem-receiving part of the sealing ring presents a lobed surface to the stem.

11. Valve according to claim 10, wherein the lobed surface and the stem-receiving part of the stem define one or more wells.

12. Valve according to claim 11, wherein said one or more wells contain lubricant material therein.

13. Valve according to any of claims 1 to 12, wherein the valve body has a metering chamber, a sampling chamber and therebetween is provided a second sealing ring within which the stem is slidably movable, the valve stem having a transfer passage such that in the valve-closed position the dispensing passage is isolated from the metering chamber and the metering chamber is in communication with the sampling chamber via said transfer passage, and in the valve-open position the dispensing passage is in communication with the metering chamber and the transfer passage is isolated from the metering chamber, wherein the second sealing ring is shaped such as to reduce the contact area between the second sealing ring and the valve stem.

14. Valve according to claim 13, wherein the area of contact between the second sealing ring and the valve stem is less than 90% of what the area of contact would be if the second sealing ring had square-cut edges.

15. Valve according to either of claims 13 or 14, wherein the second sealing ring is formable by a moulding process.

16. Valve according to claim 15 wherein the moulding process is injection moulding.

17. Valve according to claim 15 wherein the moulding process is compression moulding.

18. Valve according to claim 15 wherein the moulding process is transfer moulding.

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Glaxo Group Ltd.  
Park Road  
Ware, Herts.  
SG12 ODP  
GB

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Ware, Herts.  
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GB

This person is:

- ☐ applicant only  
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☐ inventor only (If this check-box is marked, do not fill in below.)

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GODFREY, James William  
Glaxo Group Ltd.  
Park Road  
Ware, Herts.  
SG12 ODP  
GB

This person is:

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Christopher Gerard Pike Agent for the Applicants	

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